Small Business Innovation Research/Small Business Tech Transfer

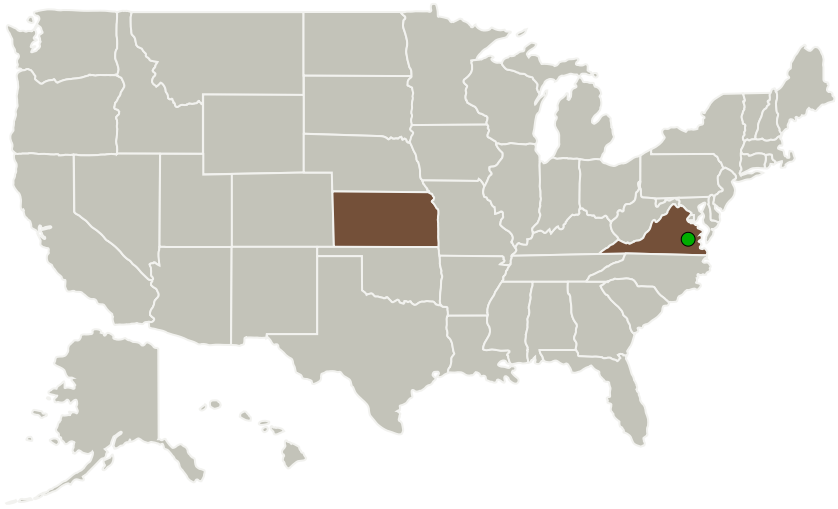
SDR-Based MicroADS-B for Low Altitude Small UAS Operations, Phase I

Completed Technology Project (2016 - 2016)

Project Introduction

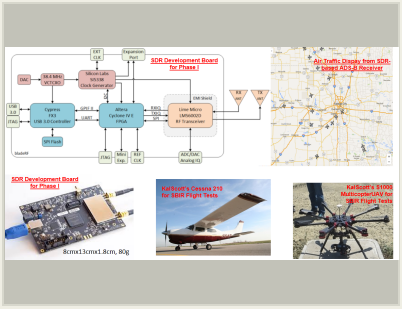
ADS-B is emerging as the defacto standard for manned aircraft in the context of NextGen ATM. There are several advantages to ADS-B, but most ADS-B gear was developed for manned aircraft, and some smaller versions have been developed for UAVs recently. However, even the smallest currently-available ADS-B transponder is still about 250g, which is not suitable for small UAVs, such as those becoming popular for civilian use in the US. KalScott proposes to develop a micro ADS-B unit, which is light enough, inexpensive enough, and uncomplicated enough that it can be adopted readily for small civilian UAVs.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
KALSCOTT Engineering, Inc.	Lead Organization	Industry	Lawrence, Kansas
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations	
Kansas	Virginia



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Completed Technology Project (2016 - 2016)

Project Transitions

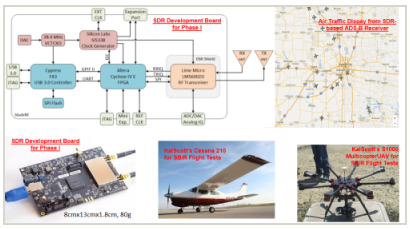
June 2016: Project Start

December 2016: Closed out

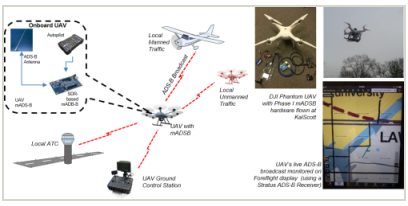
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139733)*

Images



Briefing Chart Image
SDR-Based MicroADS-B for Low Altitude Small UAS Operations, Phase I
(https://techport.nasa.gov/image/128127)



Final Summary Chart Image
SDR-Based MicroADS-B for Low Altitude Small UAS Operations, Phase I Project Image
(https://techport.nasa.gov/image/129995)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

KALSCOTT Engineering, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

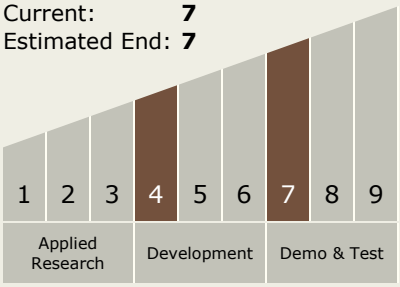
Carlos Torrez

Principal Investigator:

Thomas S Sherwood

Technology Maturity (TRL)

Start: **4**
Current: **7**
Estimated End: **7**



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Completed Technology Project (2016 - 2016)

Technology Areas

Primary:

- TX17 Guidance, Navigation, and Control (GN&C)
  - TX17.1 Guidance and Targeting Algorithms
    - TX17.1.2 Targeting Algorithms

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System